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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/817,641	03/26/2001	Dejian Zhou	NORT0096US(13881RRUS01U)	8711

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EXAMINER

CHOW, MING

ART UNIT

PAPER NUMBER

2645

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/817,641

Applicant(s)

ZHOU, DEJIAN

Examiner

Ming Chow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-30 and 32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30, 32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1, 8, 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term “likely” is not clearly defined.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the

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reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-30, 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Mo (US: 6137875).

For claims 1, 4, 12, 22, 24, 25, 29, 32, Mo teaches on column 4 line 1-3 determining whether a trunk is available on the free list (reads on claimed “a storage element”).

Therefore, this determination determines other trunks (vs. the trunk is available) are most likely to be used. In response to the determination, and so the least likely to be used trunk is selected.

Mo teaches on column 2 line 60-62 administration module (claimed ‘controller’) determines which trunk is available.

Mo teaches on Fig. 2 when FIFO is determined to have precedence (priority), the sub-trunk group (item 202 Fig. 2) is more likely to be used by switch module 13 of Fig. 2. Therefore, switch module 11 of Fig. 2 selects another trunk from sub-trunk group (item 200 of Fig. 2).

Regarding claims 2, 15, 23, 26, Mo teach on item 204 Fig. 2 main queue where lists available trunks for the first switch. Mo teaches on item 206 Fig. 2 shadow queue lists available trunks for the second switch. There must be identifiers in the main queue and shadow queue to identify trunks.

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Regarding claims 3, 13, 19, Mo teaches on column 3 line 44-46 and Fig. 2 both ends of a trunk group hunt an idle trunk. The FIFO mechanism reads on the claimed “least idle algorithm”. The LIFO mechanism reads on the claimed “most idle algorithm”.

Regarding claims 5, 17, 27, Mo teaches on steps 308, 316 the result of “YES” reads on claimed “select one trunk”. Mo teaches on steps 318, 310 decrement idle count (reads on claimed “remove an identifier of one trunk”).

Regarding claims 6, 7, 18, 28, Mo teaches on Fig. 4 increment free count (reads on claimed “return an identifier of a released trunk”).

Regarding claims 8, 16, see on column 4 line 10-44. The member number of Mo is the claimed “identifier”.

Regarding claims 9, 20, Mo teaches on column 3 line 48-54 Forward Linear and Backward Linear algorithms.

Regarding claims 10, 21, Mo teaches FIFO (claimed “clockwise circular queue”) and LIFO (claimed “counter-clockwise circular queue”). A circular queue is a FIFO or a LIFO queue that is logically represented in a circular fashion.

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Regarding claim 11, Mo teaches on step 316 Fig. 3. Switch 1 of Fig. 1 identifies available and unavailable trunks (reads on claimed “track trunk selections”) when trunks are used by switch 3 (claimed “second switch”) of Fig. 1 as a priority trunk group.

Regarding claim 14, all rejections as stated in claims 1 and 2 above apply.

Item 204 of item 51 in Fig. 2 is the claimed first queue which arranges identifiers in FIFO order. Item 206 of item 53 in Fig. 2 is the claimed second queue which arranges identifiers in LIFO order (different arrangement from the first queue).

Mo teaches on step 308 Fig. 3, when the outcome of step 308 is “NO” the trunks have all been selected by switch module 11 and it reads on claimed “selecting a first trunk from available trunks in the first queue”. Also, step 308 of Fig. 3 uses the second queue (LIFO) to predict if the first trunk selected from the first queue (FIFO; item 204 of item 51) will conflict with a trunk to be selected by the second queue (switch system). When the outcome of step 308 is “NO”, it predicts the trunk that has been selected by switch 11 will have a conflict with a trunk in the second queue (LIFO; item 206 of item 53 in Fig. 2) if selected by switch 13.

Regarding claim 30, all rejections as stated in claims 1 and 2 above apply.

*Response to Arguments*

3. Applicant's arguments filed on 2/9/05 (RCE) have been fully considered but they are not persuasive.
- i) Applicant argues, on page 10-11, regarding term “likely”. By analyzing the claim language in light of the content of the particular application disclosure, the Examiner believes the claim language does not provide metes and bounds for one skilled in the art to interpret the claim. The MPEP states, on section 2173.02, if the language of the claim is such that a person of ordinary skill in the art could not interpret the metes and bounds of the claim so as to understand how to avoid infringement, a rejection of the claim under 35 USC 112, second paragraph, would be appropriate. As the Examiner responded in the previous Office Action, it is unclear to what extent is considered as “likely”. Also, does it refer to “most likely” or “least likely”? How the term “likely” is interpreted if an infringement issue is raised and where is the metes and bounds?
  - ii) Applicant argues, on page 11-12, regarding limitation of “a controller to determine.....”. As rejections stated above in claim 1, the controller does determine the trunk “likely” to be used.
  - iii) Applicant argues, on page 12, regarding claim 5. The identifiers in item 204 are the same as identifiers in item 206 Fig. 2 of Mo. When an identifier in item 204 is removed, the same identifier must also be removed from item 206 Fig. 2 in order to indicate the unavailability of the same trunk.

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- iv) Applicant argues, on page 13, regarding claim 6. Same response as stated in item (iii) above.
- v) Applicant argues, on page 13, regarding claim 14. Same response as stated in item (iii) above that identifiers in item 204 and item 206 of Fig. 2 are the same. If the trunk in item 206 is available, the trunk will “less likely” conflict with the trunk to be selected by switch 13 per LIFO and FIFO algorithms implemented by Mo.
- vi) Applicant argues, on page 14, regarding claim 22. Same response as stated in item (iii) above that identifiers in first list and second list are the same. Therefore, when the trunk is determined (tracked) its availability in the first list the same trunk in the second list is also tracked.
- vii) Applicant argues, on page 15, regarding claim 24. See response stated in item (iii) above.

### ***Conclusion***

4. The prior art made of record and not replied upon is considered pertinent to applicant's disclosure.

- Simcoe et al (US: 5313641) teach fast arbiter having easy scaling for large numbers.



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5. Any inquiry concerning this application and office action should be directed to the examiner Ming Chow whose telephone number is (703) 305-4817. The examiner can normally be reached on Monday through Friday from 8:30 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang, can be reached on (703) 305-4895. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service whose telephone number is (703) 306-0377. Any response to this action should be mailed to:

**Commissioner of Patents and Trademarks**

**Washington, D.C. 20231**

**Or faxed to Central FAX Number 703-872-9306.**

Patent Examiner

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Ming Chow



**FAN TSANG**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**